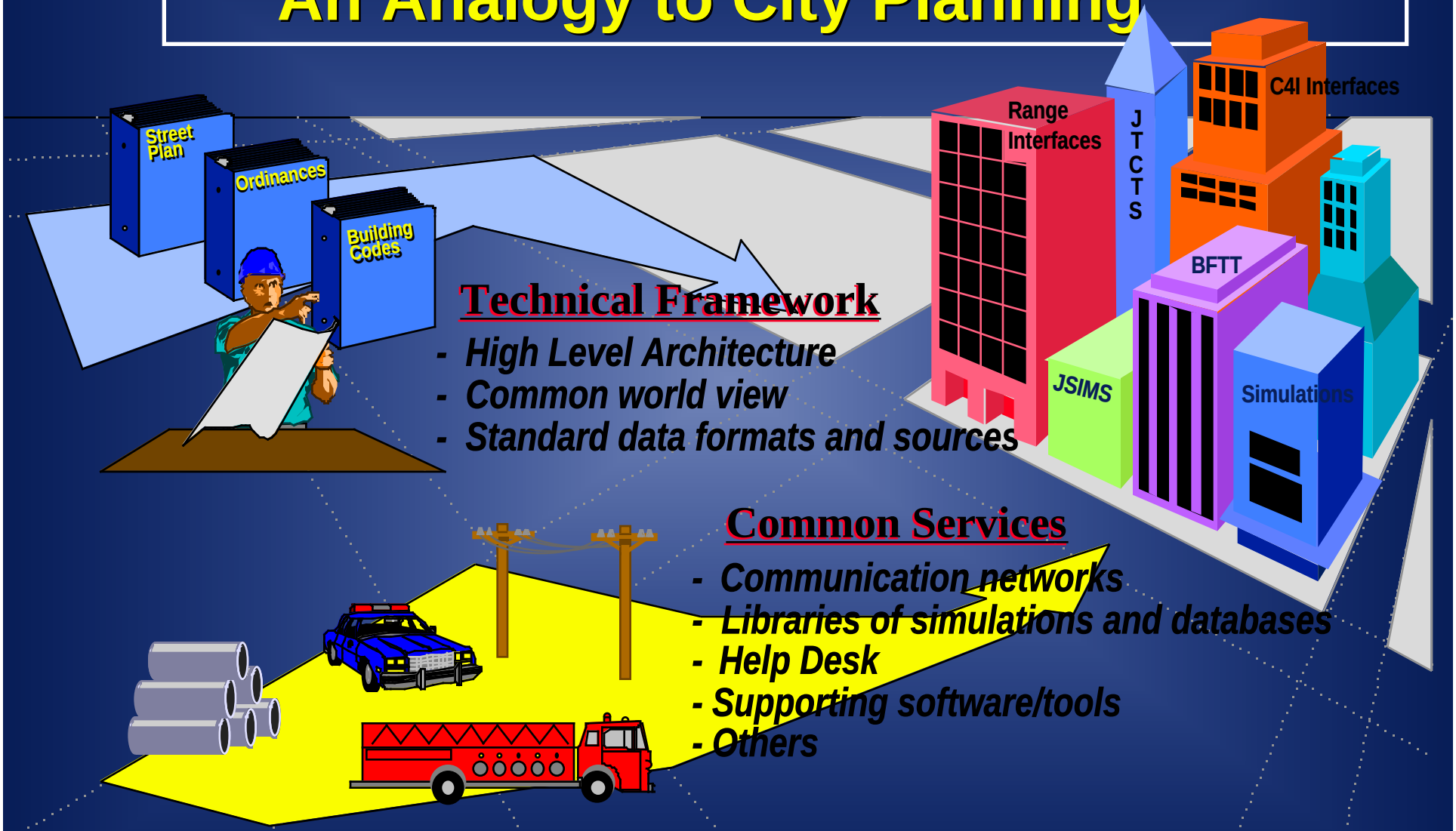
DoD High Level Architecture
I/ITSEC '96

DoD M&S Strategy: An Analogy to City Planning



Technical Framework

- *High Level Architecture*
- *Common world view*
- *Standard data formats and sources*

Common Services

- *Communication networks*
- *Libraries of simulations and databases*
- *Help Desk*
- *Supporting software/tools*
- *Others*

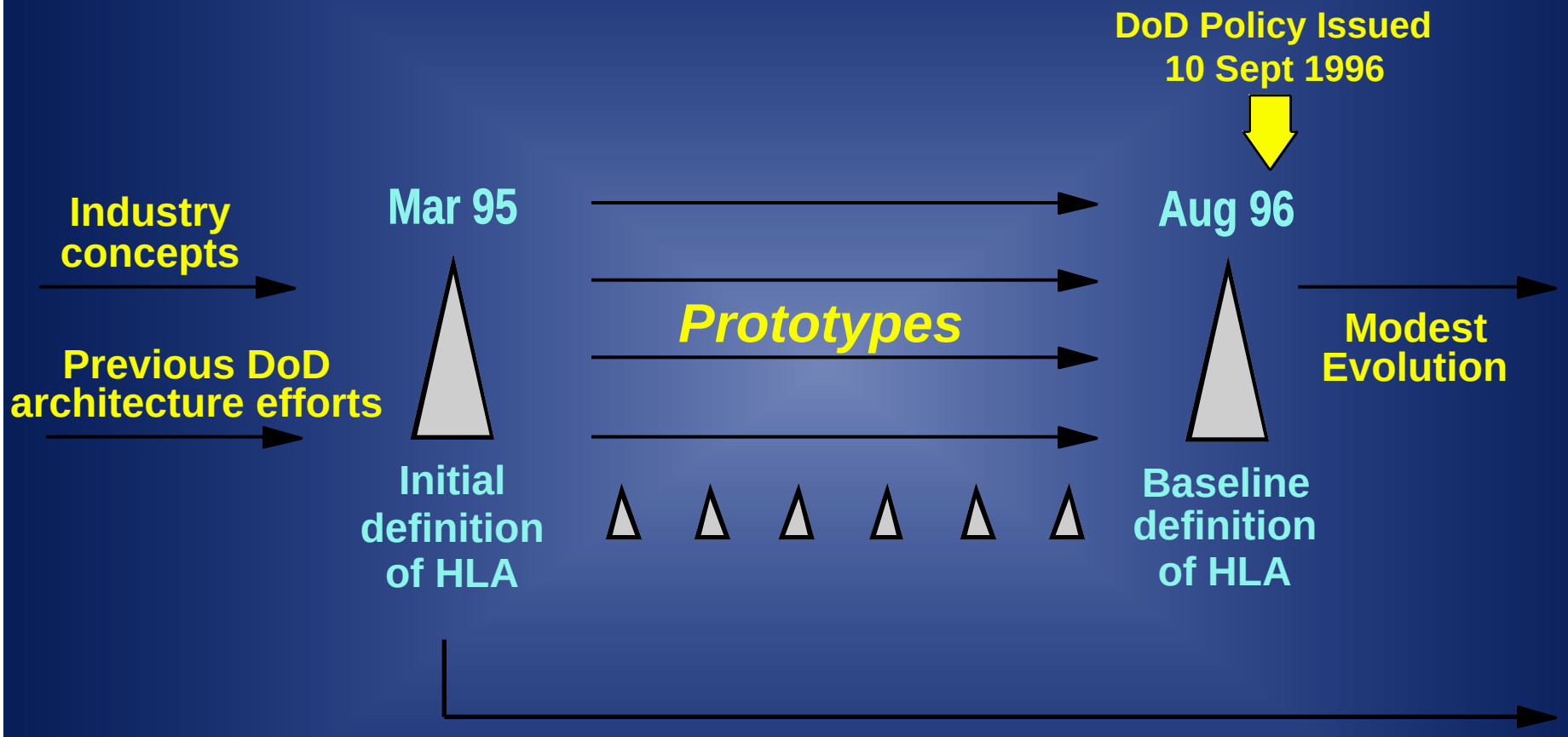
Payoffs: Interoperability and reuse = capability and cost-effectiveness

DoD M&S Master Plan Objective 1-1

- **Objective 1-1. Establish a common high-level simulation architecture to facilitate the interoperability of all types of models and simulations among themselves and with C4I systems, as well as to facilitate the reuse of M&S components.**
  - **Simulations developed for particular DoD Components or Functional Areas must conform to the High Level Architecture**
  - **Further definition and detailed implementation of specific simulation system architectures remain the responsibility of the developing Component**

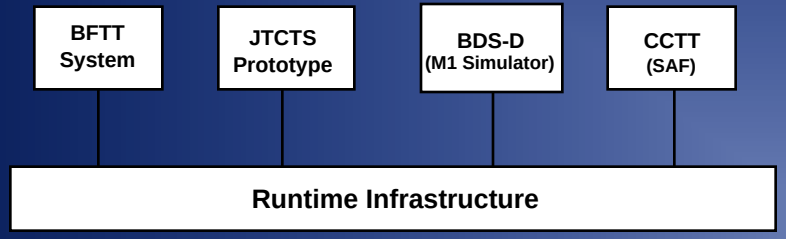
The Common Technical Framework, and specifically the High Level Architecture, represents the highest priority effort within the DoD modeling and simulation community.

HLA Development Process Overview

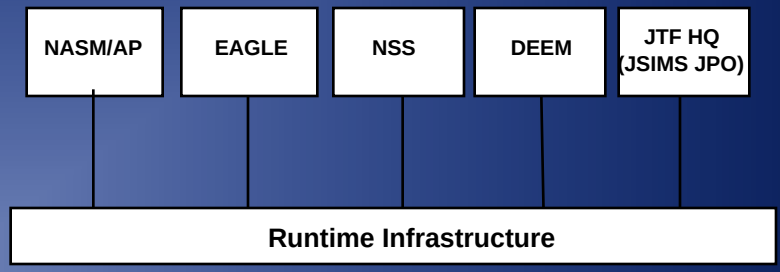


HLA Prototype Federations

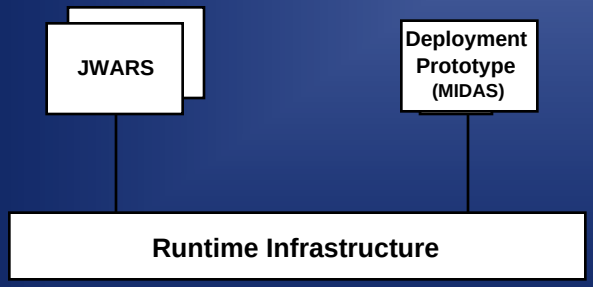
Platform Federation



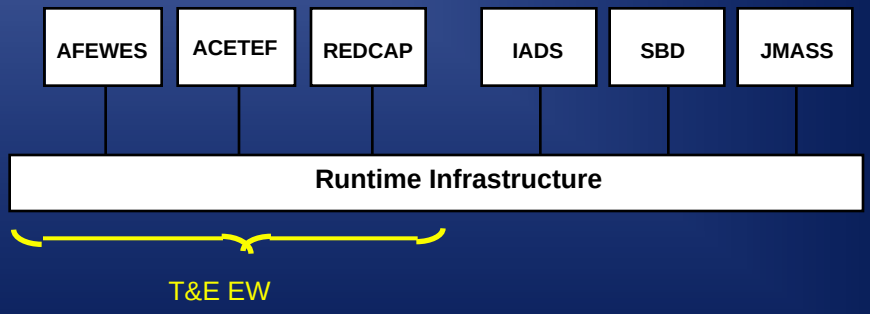
Joint Training Federation



Analysis Federation



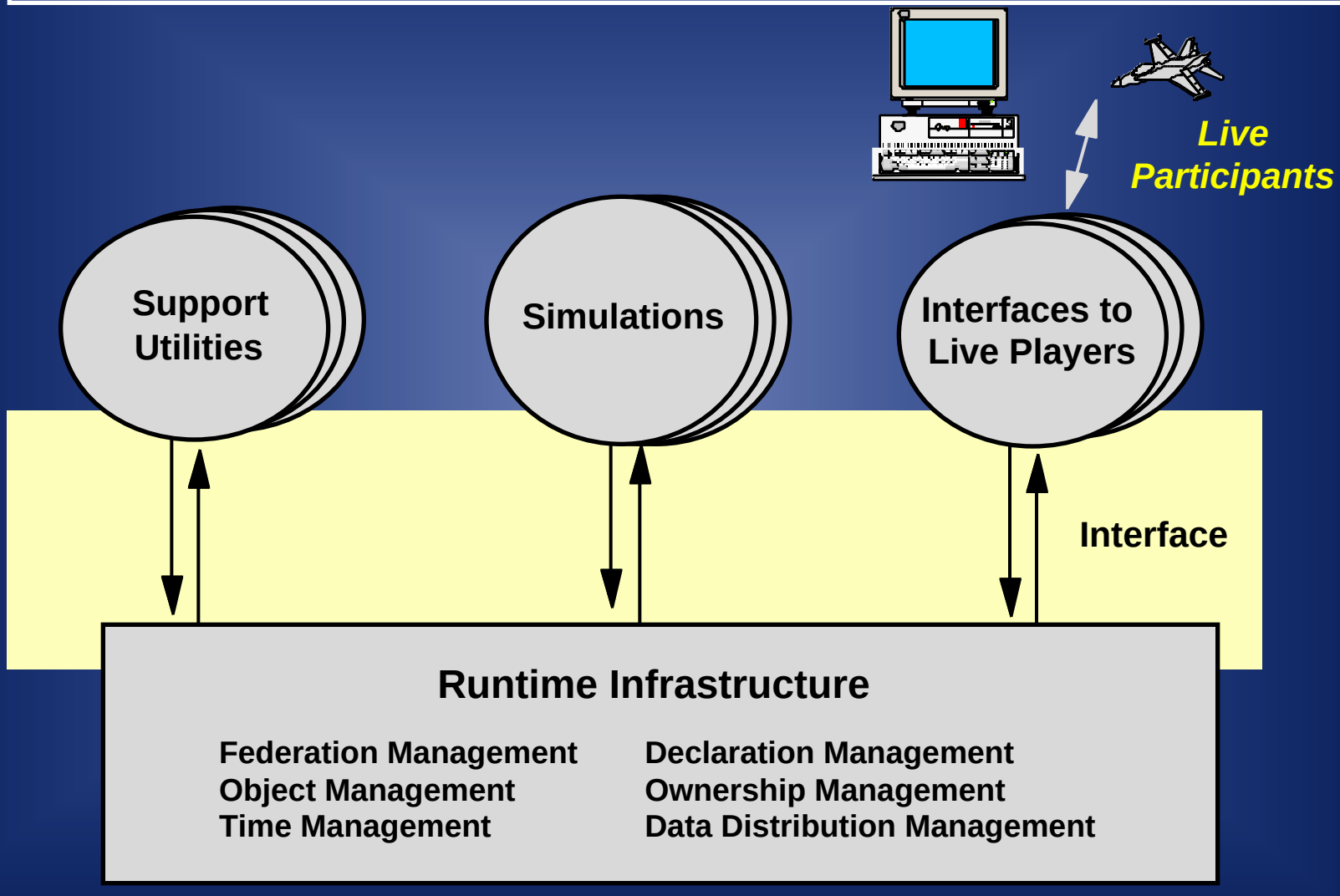
Engineering Federation



What is the High Level Architecture?

- The HLA
  - is a structure which guides the "division of labor" between simulations and a specialized piece of software called the Runtime Infrastructure
  - is founded on the idea that a single computer simulation of everything that DoD does is impractical
  - will enable the DoD to pull together diverse computer simulations
    in a modular way, composing a collection of players called a federation
- Officially, HLA is designated as the Technical Architecture for DoD simulations
- HLA is defined by three technical documents
  - HLA Rules
  - HLA Interface Specification
  - HLA Object Model Template

Functional View of the Architecture



RTI Release Strategy

- RTI F.0 is being developed for release to the DoD Modeling and Simulation Community on 12/16/96.
- RTI F.0/1.0 released initially as C++ executable code for Sun/Solaris 2.5 machines. --> DMSO plans to extend RTI F.0 to other computing platforms, operating systems and languages for delivery in early Spring ‘97.
- RTI F.0 is an initial “breadboard” version of the RTI designed to provide the basic functionality specified in the HLA Interface Specification v1.0 without having to satisfy the performance requirements of large scale simulation exercises.
- DMSO is in the process of procuring commercially-developed RTI software which will be provided as GFE to the DoD and other simulation programs beginning in early FY 1998. --> RTI 2.0

RTI F.0 Demonstrations

- JAGER - Just A Game Exploiting the RTI
- HLA ModSAF used by RTI Testbed
  - Wide area viewer using DIS Stealth and DIS translator
- HLA EAGLE used by RTI Testbed
- RTI Installation
- FOM development Tool